

CHAPTER 9

THE SHOP INSPECTOR

Preventive maintenance (PM) and the safety inspection of a vehicle go hand in hand. Besides keeping a vehicle in good operating condition, preventive maintenance ensures that a vehicle is safe to operate. The proper inspection of the devices or parts of a vehicle that make for safe operation can be done at scheduled preventive maintenance times.

As a CM-1, you maybe assigned the job of vehicle inspector. Besides making scheduled CESE inspections, you should be looking for inoperative devices that make a vehicle unsafe, and for damage that may have been caused by improper or dangerous operating procedures. You will need to be familiar with instructions and regulations pertaining to safety as well as regular scheduled maintenance inspections. Using the COMCBPAC/COMCBLANTINST 5100 (series), NAVFAC P-300, *Management of Transportation Equipment Manual* and chapter 19 of the U.S. Army Corps of Engineers, *Safety and Health Requirements Manual*, 385-1-1, will provide you with guidance in vehicle safety and reliability inspections. Be sure the mechanics working under your supervision are aware of these instructions and the proper procedures of making a thorough vehicle inspection. The job of vehicle

inspector should not be assigned to an inexperienced mechanic.

WARNING

CUTTING SAFETY SHORT MAY CUT
SOMEONE'S LIFE SHORT.

THE VEHICLE INSPECTOR

The vehicle inspector is assigned to a maintenance shop in either a public works department, a battalion, or a special operating unit to assist the transportation shops supervisor (public works) or maintenance supervisor (battalion) in inspecting the equipment to be serviced. The inspector should be a senior mechanic, proficient in his rating, and capable of readily determining the nature of necessary repairs. He should be able to exercise independent judgment as to whether the equipment requires immediate attention or can be delayed until the next regular scheduled preventive maintenance inspection. The scheduled preventive maintenance system is designed to ensure optimum life out of the equipment of a unit or station. Figure 9-1 defines the level of inspection and the intervals required for each of

	TYPE "A" PM	TYPE "B" PM	TYPE "C" PM
Equipment Type	Minimum Service	Detailed Service & Inspection	Annual Safety Inspection
Automotive	Every 40 working days	After every two "A" PMs	As directed by COMCBPAC/COMCBLANT & COM-FIRSTNCB representatives. (50% of CESE on site per deployment)
Construction	Every 40 working days	After every two "A" PMs	
Material Handling	Same as for Construction Equipment	Same as for Construction Equipment	

NOTE 1: The above are minimum inspection and service intervals under normal conditions and should be decreased for double shift operations and extreme terrain conditions or as directed by the maintenance supervisor.

NOTE 2: PM scheduling for CESE attached to COMFIRSTNCB (Reserves) will be serviced as follows: an "A" type PM will be performed every 90 working days, and a "B" type PM will be performed after three consecutive "A" type PMs. Reserve units will use a standard 40 day PM cycle when the unit is recalled to active status.

Figure 9-1. Preventive maintenance interval schedule.

the three categories of equipment. The inspector is responsible for the following:

1. Performing the scheduled inspection, completing the appropriate record forms, and noting deficiencies clearly on the Equipment Repair Order or Shop Repair Order

2. Checking the file of operator trouble reports before equipment inspection

3. Using the latest testing equipment and methods available to the unit or public works department

4. Performing minor adjustments incidental to the inspection

5. Delivering the initialed Equipment Repair Order or Shop Repair Order to the maintenance supervisor or shops supervisor

6. Road testing or field testing the equipment before and following the PM, repair, or overhaul

7. Releasing the equipment to full service "ONLY" after final inspection is completed

Inspectors will immediately notify the maintenance supervisor or shops supervisor whenever suspected vehicle abuse or reoccurring mechanical failures occur.

THE PUBLIC WORKS SHOP INSPECTOR

The three types of inspections performed at an equipment maintenance shop on a public works station are reliability, acceptance, and safety.

The safety inspection is done once a year or every 12,000 miles, whichever occurs first. All deficiencies found should be corrected before the vehicle is returned to service. Automotive safety inspections include the following:

1. Brake system. Road test to determine if the brakes are functioning properly. Check brake pedal free travel. Remove the wheels and inspect drums and rotors for wear or cracking. Inspect the pads and lining for excessive wear. Check all brake calipers and wheel cylinders for damage or leaks. Inspect all hydraulic brake lines for leaks, and check the brake fluid level. On air-brake systems, inspect air-brake accessories, air lines, and air tanks for leaks and deterioration. Check air-brake instruments, air control valves, trailer hoses, and glad hands.

2. Steering and suspension system. Check all steering devices and linkage for wear or damage. Inspect

all suspension bushings and pivot points. Check all suspension parts for wear or damage.

3. Shock absorbers. Check for leakage and proper operation.

4. Tires and wheels. Check tires for damage or excessive wear. Front tires of buses, trucks, and truck tractors will be replaced when less than 4/32-inch tread remains. All tires will be replaced when less than 2/32-inch tread remains.

5. Fuel system. Check all fuel lines and fuel line connections for signs of leakage. Inspect fuel filter housings for signs of leakage or damage.

6. Exhaust system. Check the muffler, exhaust pipe, tailpipe, and all connections for serviceability and leakage.

7. Seat belts. Inspect seat belts for wear and for proper mounting.

8. Lights. Check all lights, signals, and reflectors. Inspect the condition of the trailer jumper cable. Check the headlights for proper alignment. Lighting requirements are found in the *Federal Motor Carrier Regulations Pocketbook*, U.S. Department of Transportation, Federal Highway Administration, Parts 393.9 through 393.33.

9. Instruments, controls, and warning devices. Inspect all instruments, gauges, mirrors, switches, and warning devices for proper functioning and damage.

10. Windshield wipers, glass, defrosters. Check wipers, glass, and defrosters for proper operation, wear, damage, or deterioration.

11. Fifth wheel and trailer. Inspect trailer kingpin for wear and damage. Check tow bars, tongue sockets, and safety chains.

12. Special markings. Inspect all special identification markings, such as NONPOTABLE WATER, FLAMMABLE, U.S. NAVY, and so forth.

13. Other items. Check all other components required by the states in which the vehicle is being operated.

For the annual safety inspection on construction and allied equipment, use the correct manufacturer's maintenance and repair manual for guidance.

To avoid unnecessary downtime, coordinate and perform the safety and reliability inspections at the same time. Figure 9-2 is one example of a standard inspection sheet used at some public works stations. The inspection, lubrication, and adjustment functions and


SPECIFICATION FOR SCHEDULED MAINTENANCE INSPECTIONS AND SERVICES									
VEHICLE MAKE	MODEL(S)							YEAR(S)	
OPERATION				SERVICE INTERVAL					See Manual Page
1000 MILES 				6	12	18	24	30	
ENGINE									
Change engine oil and filter				X	X	X	X	X	X
Clean and refill oil bath air cleaner (if so equipped)				X	X	X	X	X	X
Replace dry type of air cleaner filter (6 cyl.)					X		X		X
Replace dry type of air cleaner filter (8 cyl.)							X		X
Test crankcase emission system. Clean system and replace emission control valve if required.				X	X	X	X	X	X
Clean crankcase emission system hoses, tubes, fittings, carburetor spacer and replace if necessary. Replace emission control valve.					X		X		X
Clean crankcase filler breather cap.				X	X	X	X	X	X
Replace fuel system filter (gas engine)							X		X
Inspect thermactor exhaust emission control system hoses and replace if required					X		X		X
Drain, flush, and refill cooling system				EACH 24 MONTHS					
Check and lubricate exhaust control valve. Free up if necessary (if so equipped).				X	X	X	X	X	X
Clean and adjust distributor points—replace as required (Clean distributor cap)					X		X		X
Check and adjust carburetor—idle speed and fuel mixture					X		X		X
Check and clean external choke mechanism					X		X		X
Check and adjust ignition timing—initial timing, mechanical and vacuum advances, and vacuum retard (if so equipped).					X		X		X

Figure 9-2.-Example of public works equipment inspection sheet.

frequencies are to be determined by the maintenance and repair manual supplied with the vehicle. When these specifications are not available, they shall be developed under the direction of the transportation director and approved in writing.

ACCEPTANCE INSPECTIONS

Equipment inspectors will inspect all CESE arriving at an activity. Predelivery inspection is similar to that performed by a dealership and is required to ensure safe, serviceable operation. The inspector should pay

particular attention to the detection of deficiencies eligible for correction under the warranty program, and for damage caused by the shipper (see chap. 1). Report these problems to the transportation shops supervisor for appropriate action.

PROPERTY RECORD CARD, DD FORM 1342

The inspector is the primary source for gathering information used to complete the Property Record Card,

DOD PROPERTY RECORD		XX ACTIVE INITIAL		2. ACQUISITION DATE		3. DOD GOVERNMENT TAG NO.		Form Approved	
		75126		94-XXXXX		Budget Bureau No. 22-R0209			
SECTION I. INVENTORY RECORD									
4. COMMODITY CODE		5. STOCK NUMBER		6. ACQUISITION COST		7. TYPE CODE		8. POWER TO STATUS CODE	
		2C232000-1779258		3400		4		91	
14. NAME OF MANUFACTURER				15. MFR'S CODE		16. MANUFACTURER'S MODEL NO.		17. MANUFACTURER'S SERIAL NO.	
A. M. GENERAL CORP				34623		M151A2		XXXXXX	
18. LENGTH		19. WIDTH		20. HEIGHT		21. WEIGHT		22. CERTIFICATE OF NON-AVAILABILITY NUMBER	
133"		64"		71"		2400		249-4-AT-3100	
23. ASO NO.						24. AND		25. CONTRACT NUMBER	
								DAAE07-71-C-0103	
26. DESCRIPTION AND CAPACITY									
Truck, Utility, 1/4 ton, 4 X 4, 3,500 GVW, M-Series, W/O Winch Tires: 700 X 16 - 6 ply, NDCC, Tube Type									
Engine Serial #5033952									
CONTINUED ON REVERSE SIDE <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO									
SECTION II. ELECTRICAL CHARACTERISTICS									
QUANTITY		HORSEPOWER		VOLTS		PHASE		CYCLE	
28. PRESENT LOCATION						29. DIPEC CONTROL NO.			
NCBC Port Hueneme, CA 93043									
						29. POSSESSOR CODE			
						62583			
SECTION III. INSPECTION RECORD									
				YES		NO			
30. CAN ITEM BE STORED AND MAINTAINED ON SITE FOR AT LEAST 12 MONTHS?								YES NO	
31. HAS ITEM BEEN REBUILT/OVERHAULED? IF SO, WHEN?									
32. HAS ITEM BEEN MODIFIED FROM ORIGINAL CONFIGURATION? IF SO, EXPLAIN UNDER REMARKS BELOW									
33. WAS ITEM INSPECTED UNDER POWER? IF NOT, EXPLAIN UNDER REMARKS BELOW									
34. ARE MAINTENANCE COSTS NORMAL? IF NOT, EXPLAIN UNDER REMARKS BELOW									
35. ARE SAFETY DEVICES ADEQUATE AND SATISFACTORY? IF NOT, EXPLAIN UNDER REMARKS BELOW									
36. ARE INSTALLATION INSTRUCTIONS AVAILABLE FOR TRANSPORT?									
37. ARE OPERATING INSTRUCTIONS AVAILABLE FOR TRANSPORT?									
38. WAS ITEM LAST USED ON A FINISHING OPERATION?									
39. WILL ADJUSTMENTS OR CALIBRATION CORRECT DEFICIENCIES?									
40. IS ITEM SEVERABLE WITHOUT DAMAGE TO COMPONENTS? IF NOT, GIVE THEIR REPLACEMENT COST \$									
41. IS ITEM IN OPERABLE CONDITION?									
42. MUST ITEM BE REPAIRED/REBUILT/OVERHAULED TO PERFORM ALL FUNCTIONS? \$									
43. DO QC RECORDS INDICATE SATISFACTORY PERFORMANCE? IF NO, EXPLAIN UNDER REMARKS BELOW									
44. ARE MANUALLY OPERATED MECHANISMS IN WORKING ORDER? IF NO, DESCRIBE UNDER REMARKS BELOW									
45. ARE SCALES, DIALS, AND GAUGES WORKING AND READABLE? IF NO, DESCRIBE UNDER REMARKS BELOW									
46. ARE HYDRAULIC PUMPS, VALVES, AND FITTINGS OPERATING PROPERLY? IF NO, DESCRIBE UNDER REMARKS BELOW									
47. ARE ELECTRONIC SYSTEMS AND CONTROLS OPERATING PROPERLY? IF NO, DESCRIBE UNDER REMARKS BELOW									
48. HOW MANY HOURS WAS ITEM USED BY CURRENT POSSESSOR?									
49. EXPLAIN UNDER REMARKS LAST USE OF EQUIPMENT DESCRIBED IN ITEM 26 ABOVE									
50. ESTIMATED COST FOR PACKING, CRATING, HANDLING \$									
51. INDICATE DATE ITEM WILL BE AVAILABLE FOR REDISTRIBUTION									
52. CONDITION CODE								N-1	
53. OPERATING TEST CODE									
SECTION IV. REMARKS									
54. REMARKS									
TC 1 SC 0 ECC 030701 ND 11									
REMARKS CONTINUED ON REVERSE SIDE <input type="checkbox"/> YES <input type="checkbox"/> NO									
SECTION V. DISPOSITION RECORD									
55. CONSIGNEE (NAME AND ADDRESS, INCLUDING ZIP CODE)				56. TYPE OF DISPOSITION				57. DATE OF DISPOSITION AND PROCEEDS IF SOLD	
				<input type="checkbox"/> DONATION <input type="checkbox"/> DESTRUCTION					
				<input type="checkbox"/> SALE <input type="checkbox"/> ABANDONMENT					
SECTION VI. VALIDATION RECORD									
58. VALIDATION (TYPED NAME(S) AND SIGNATURE(S))									
John Doe, Equipment Specialist									
5/6/82									
DD FORM 1342 1 FEB 68									
PREVIOUS EDITIONS OF DD FORM 1342 ARE OBSOLETE. REPLACES DD FORMS 1342M, 1342S, AND 1342SM WHICH ARE OBSOLETE.									
S/N-0102-012-9001									

Figure 9-3. DoD Property Record Card, DD Form 1342 (front).

DD Form 1342 (fig. 9-3 and fig. 9-4). This form is used to report acquisitions and transfers of Navy equipment in support of the Navy equipment registration system. It is also used to assist the mechanics, shop supervisor, and technical librarian with information needed in the research of repair parts. Property Record Cards are updated each time a serialized component is changed on the unit (engine, transmission, etc.). The need for

accurate preparation of this form cannot be overemphasized as this document is the sole source for recording all pertinent data relative to the equipment at the Civil Engineer Support Office, Port Hueneme, California.

Since he is the one performing the final inspection, the inspector is responsible for accuracy in obtaining correct information.

Continuation of Block 26 Data																																																																							
1. 3600 lb. rated CVW Cap.			10. Rear axle data:																																																																				
2. Body Data:			a. One, driving axle																																																																				
a. Open type body w/fabric top			(1) Conventional, single speed																																																																				
3. W/cab			b. Ordinance design																																																																				
a. Conventional			11. Single rear wheels																																																																				
b. Cab integral w/body			12. Hydraulic service brakes																																																																				
(1) Open			13. 24 volts starting, ignition & lighting systems																																																																				
c. Front mounted			14. W/sealed system for underwater fording																																																																				
d. 4 person seating cap.			15. W/towing pintle hook																																																																				
e. Single sitdown drive controls			16. Mfr. Data for body																																																																				
f. Bucket seats in front			a. Budd Mfr. Co.																																																																				
(1) Folding seat in rear			b. Ord. #8754459																																																																				
4. 85" wheel base			17. Mfr. for Chassis:																																																																				
5. Tread width data:			a. Ford Motor Co.																																																																				
a. 53" front			b. Model M151A2																																																																				
b. 53" rear			18. Govt. Spec. Data:																																																																				
6. Engine data:			a. MIL																																																																				
a. One gasoline engine			b. MIL-T-45331B																																																																				
b. 4 cylinder			<u>ADDITIONAL DATA</u>																																																																				
c. 71 HP @ 4000 RPM			Capacities: Cooling 9 qts.																																																																				
d. Front mtd. w/forward projection hood			Oil 5 qts.																																																																				
e. Ordinance design			Fuel 17.7 gal.																																																																				
(1) P/N 11660425			Transmission, incl. transfer trans 2.87 qts																																																																				
(2) O.H.V. liquid cooled			Differential (EA) 1 qt.																																																																				
(3) NSN 2805-00-165-4016			W/spare wheel & tire																																																																				
7. Transmission data:			<u>OVERALL DIMENSIONS</u>																																																																				
a. Manual, four speed			L. 132.7"																																																																				
b. Ordinance design			W. 64.3"																																																																				
(1) P/N 7536199			H. 71" reducible to 52.5																																																																				
(2) NSN 2520-00-678-1808			Wt. 2400 lbs.																																																																				
8. Transfer Transmission Data:			CU. 260 cu. ft. reduced																																																																				
a. Manual, single speed			<u>TM MANUALS</u>																																																																				
b. Ordinance design and is integral with transmission			TM9-2320-218-20																																																																				
9. Front Axle Data:			TM9-2320-218-34																																																																				
a. Driving, manual engagement type, 2 drum independent			TM9-2320-218-34P																																																																				
b. Ordinance design			TM9-2320-218-10C1																																																																				
<table border="1"> <thead> <tr> <th>NOMENCLATURE</th> <th>MFR CODE</th> <th>P/N</th> <th>U/CODE</th> <th>P/N (ORD)</th> <th>NSN</th> </tr> </thead> <tbody> <tr> <td>Starter</td> <td>19728</td> <td>MCZ4005UT</td> <td></td> <td></td> <td>2920-00-678-1850</td> </tr> <tr> <td>Generator</td> <td>19728</td> <td></td> <td>19207</td> <td>10929868</td> <td>2920-00-909-2483</td> </tr> <tr> <td>Spark Plug</td> <td>19728</td> <td>AR55</td> <td></td> <td></td> <td>2920-00-955-9784</td> </tr> <tr> <td>Fan & Gen Blt-2ea</td> <td>11288</td> <td>11040</td> <td>19207</td> <td>11599019</td> <td></td> </tr> <tr> <td>Distributor</td> <td>19728</td> <td>IDA4401UT</td> <td></td> <td></td> <td>2920-00-065-7536</td> </tr> <tr> <td>Fuel Pump</td> <td>14892</td> <td>480526</td> <td></td> <td></td> <td>2910-00-678-1856</td> </tr> <tr> <td>Carburetor</td> <td>79960</td> <td>13841</td> <td>19207</td> <td>11641105</td> <td></td> </tr> <tr> <td>Oil Filter Ele</td> <td>70040</td> <td>PF2</td> <td></td> <td></td> <td>3930-00-906-3974</td> </tr> <tr> <td>Battery 2 ea.</td> <td>200B, 2HN, 12 volts, 45 amp</td> <td></td> <td></td> <td></td> <td>6140-00-057-2553</td> </tr> <tr> <td></td> <td>L. 10 1/4", W. 5 5/16", H. 8 29/32"</td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table>						NOMENCLATURE	MFR CODE	P/N	U/CODE	P/N (ORD)	NSN	Starter	19728	MCZ4005UT			2920-00-678-1850	Generator	19728		19207	10929868	2920-00-909-2483	Spark Plug	19728	AR55			2920-00-955-9784	Fan & Gen Blt-2ea	11288	11040	19207	11599019		Distributor	19728	IDA4401UT			2920-00-065-7536	Fuel Pump	14892	480526			2910-00-678-1856	Carburetor	79960	13841	19207	11641105		Oil Filter Ele	70040	PF2			3930-00-906-3974	Battery 2 ea.	200B, 2HN, 12 volts, 45 amp				6140-00-057-2553		L. 10 1/4", W. 5 5/16", H. 8 29/32"				
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Figure 9-4. DoD Property Record Card, DD Form 1342 (Block 26).

For guidance in completing the DD Form 1342, Property Record Card, use the NAVFAC P-300, *Management of Transportation Equipment Manual*; NAVFAC P-404, *Naval Construction Force Equipment Management Manual*; or the COMCBPAC/COMCBLANTINST 11200.1 (series).

THE BATTALION MAINTENANCE SHOP INSPECTOR

The battalion maintenance shop inspector works directly for and is responsible to the maintenance supervisor. The inspector in a battalion or a special

operating unit will use the COMCBPAC/COMCBLANTINST 11200.1 (series) or the NAVFAC P-404, *Naval Construction Force Equipment Management Manual*, as guides. The inspector requirements are similar if not identical to those of the public works shop inspector.

BEEP INSPECTIONS

As discussed in chapter 2, a Battalion Equipment Evaluation Program, or "BEEP," inspection is conducted under COMCBPAC/COMCBLANTINST 11200.1 (series) each time a battalion is relieved on site.

[illegible]

Figure 9-5.-Example of live storage cycle log.

This inspection evaluates the condition of the equipment to establish replacement priorities. If conducted properly, it also provides the maintenance supervisor of the relieving battalion with a means of establishing a shop workload plan for the deployment.

At the time the “BEEP” inspection is conducted, all discrepancies, including rust, body damage, and paint requirements, are written on the Equipment Repair Order. The repairs needed during the “BEEP” vary with each situation. As a rule, all needed safety repairs will be corrected and repairs of less than 4 hours time

completed if parts are available. Major repairs, component overhaul, and body work are generally deferred until after the completion of the “BEEP” and the scheduled maintenance cycle has begun. Examples of equipment evaluation inspection and attachment evaluation inspection guides are in chapter 2, figures 2-17, 2-18, and 2-19.

EMBARKATION INSPECTIONS

Clean vehicles, a critical part of embarkation inspections, allow for closer inspections and speed up

clearance of customs where vehicles must be certified free of dirt and bugs. Vehicles leaving foreign countries normally will be inspected leaving that area and again upon arrival at their destination.

In addition to safety and operational checks, vehicles inspected for embarkation require an emphasis on oil, fuel, and water seepage. An occasional drip may not adversely affect the normal operation of the vehicle, but it could become hazardous while being transported. You should make sure the spare tire and all collateral equipment are loaded with the vehicle, especially under tactical conditions.

In the shop area, it is easy to accomplish the configuration of the vehicle for loading, to put down the roll over protective structure (ROPS), and to remove the counterweights, and so forth. Itemizing these and related tasks on the Equipment Repair Order will ensure that the work will be completed, and in addition, provide a record of work required at the destination.

PRESERVATION INSPECTIONS

Different units you may be attached to, usually NMCBs, will have a certain amount of their equipment in a storage program. This program is used to reduce maintenance hours by removing selected CESE from service for extended periods of time. The criteria for storage programs is listed in the COMCBLANTINST 11200.9 (series) for live storage and COMCBPACINST 11200.22 (series) for inactive storage. The maintenance supervisor should be certain that equipment shop inspectors are thoroughly familiar with these instructions. Samples of live storage cycle logs and live storage service sheets are shown in figures 9-5 and 9-6.

In the NCF (battalion), according to both instructions listed in the preceding paragraph, cranes will not be placed in active or inactive storage. Cranes will be under the control of the crane crew and will be cycled at a minimum of once every 5 days to make sure that all moving parts are mechanically sound and fully operational.

LIVE STORAGE SERVICE SHEET							
PRIMARY PM GROUP _____				SECONDARY PM GROUP _____			
ECC _____		USN _____		DESC _____			
JULIAN DATE	TYPE SERVICE						INSPECTOR/OPERATOR NAME
	09	20	40	60	PM	04	

Figure 9-6.-Example of live storage service sheet.

Public works stations have equipment utilized on a seasonal basis (snow removal equipment, grounds maintenance equipment, etc.) and is unused, in some cases, most of the year. Since specific equipment preservation and storage instructions are not available to public works commands, the transportation supervisor and the equipment inspector should develop a system to preserve, store, and monitor CESE in its preserved condition.

Appendix E of the NAVFAC P-434, *Construction Equipment Department Management and Operations Manual*, provides operational testing instructions for CESE. It is also a good source of information on preservatives and their specific uses.

DEADLINE INSPECTIONS

Deadlined equipment is inspected on its scheduled PM due date, or sooner if the maintenance supervisor determines it is needed. When a unit is placed on deadline, an 01 level PM will be performed. The equipment inspector ensures the following:

1. All openings are covered and weathertight
2. All machine surfaces are preserved.
3. All disassembled components are tagged, covered, and stored.
4. No cannibalization has taken place since the last inspection. Controlled parts interchange is not approved as a normal procedure, although the maintenance supervisor may authorize it to meet operational commitment.
5. Any parts removed from the deadlined equipment we replaced with the nonserviceable item, and the maintenance supervisor makes sure that the replacement parts are ordered NORS (not operational ready supply).
6. All replacement parts, cost, and labor hours related to the interchange are charged against the piece of equipment on which the part failed. When the replacement parts are received and installed, only the labor involved is to be charged to the piece of equipment from which the interchange part was taken. As a part of the 01 type PM, the equipment will be cycled to prevent further deterioration.

VEHICLE INSPECTIONS INVOLVING ACCIDENTS

For Naval Construction Force (NCF) units, when a vehicle that has been involved in an accident is

inspected, a type 12 Equipment Repair Order will be initiated regardless of the damage.

EXHAUST EMISSION CONTROL INSPECTIONS

Under the clean air act, DoD is required to comply with all state and local programs to improve air quality. With this in mind, check the following emissions control components on all vehicles you are inspecting for damage and tampering:

1. Catalytic converter.
2. Fuel tiller inlet restrictor.
3. Exhaust gas recirculation valve.
4. Air pump and air pump drive belt.
5. Verify the proper hookup of all vacuum lines and be sure no vacuum lines are plugged.
6. Check all other pollution control devices attached to the vehicle.

As you already know, emission control design varies between different manufacturers. Go to the proper repair and maintenance publications for correct information on these devices.

State and federal law forbid your removing or tampering with emission control devices. If the unit or station that you are assigned to does not have the equipment needed to analyze and adjust CESE equipped with these devices, the vehicle should be sent to a local dealer for repairs and proper adjustment.

CRANE INSPECTIONS

The crane inspector should be the most knowledgeable and conscientious mechanic available. In addition to the regular CESE inspection, the weight-handling equipment inspection will place primary emphasis on safety of all load bearing, load controlling parts, and safety devices for safe and sound working conditions. Examination will be made by sight, sound, touch, and as necessary, by instrumentation, nondestructive testing, and disassembly. Figure 9-7 shows the type of format used in crane condition inspection. Disassembly should be limited to suspected or abnormal conditions.

It is strongly recommended that the person selected for the job of crane inspector attend special construction battalion training-540.1, Crane and Attachments I and 540.2, Cranes and Attachments II. Both courses are

CRANE CONDITION INSPECTION RECORD						
Crane No.	Type	Location	Operator names	Operator License Nos.		
Purpose of inspection:			Date started	Date completed		
Item No.	Item description	B	D	A	Insp/ Init.	
1	Bent, cracked, or corroded structural members					
2	Cracked or corroded welds					
3	Loose, broken, missing, or deteriorated rivets or bolts					
4	Inspect all wire rope for wear, broken wires, corrosion, kinks, damaged strands, crushed or flattened sections, condition of sockets, and dead-end connections. Check for proper lubrication and evidence of proper inspection of idler sheaves and saddles. See appendices C and D for detailed inspection requirements and rejection criteria.					
5	Inspect hooks for cracks, sharp edges, and distortion. Verify disassembly, inspection, and nondestructive test (NDT) as applicable. See paragraph 1.4 of appendix E for detailed requirements.					
6	Inspect all brakes and clutches for proper operations. Spot-check components for proper adjustment and acceptable wear.					
7	Check all controls for proper condition and operation					
8	Check all control components for proper condition and operation					
9	Inspect all limit switches for condition and proper operation					
10	Ensure each drum has minimum of two complete wraps of wire rope at lowest working level					
11	Check load indicators for condition and working accuracy					
12	Inspect all mechanical equipment which is reasonably accessible for wear, cracks, and alignment					
13	Inspect where practical for worn, defective, or misaligned bearings, bushings, shafts, pins, and gears.					
14	Check components for excessive heat, vibration, noise, and oil leaks					
15	Inspect sheaves for wear, roughness, free-turning, and alignment. Gauge sheave groove where possible.					
16	Inspect for excessive wear of wheels, tires, rollers and roller paths or rails					
17	Inspect for excessive wear of chains and sprockets. Measure chain stretch of load chains.					

Figure 9-7.-Crane condition inspection record.

Item No.	Item description	B	D	A	Insp/ Init.
18	Verify that correct certified capacity charts or hook load rating data is in view of operator and/or rigging personnel				
19	Inspect operators cab for cleanliness and operation of all equipment				
20	Check machinery house for cleanliness, proper safety guards, warning signs, and storage of tools and equipment				
21	Check operation of all indicators, warning devices, and lights				
22	Check for proper type and condition of all fire protection equipment				
23	Verify that pressure vessel inspection certificates are posted and current (see NAVFAC M0-324 or appropriate document for test procedures)				
24	Check condition and function of outriggers, pads, boxes, wedges, and cylinder mountings. Check level indicators				
25	Check center pin nut and steadiment by observing operational behavior during load test (see paragraph 2.2.2, appendix E)				
26	Check travel, steering, braking, and locking devices for condition and proper operation				
27	Check radius indicator for accuracy by measuring actual radius in at least two boom positions				
28	Check pawls, ratchets, and spuds for proper engagement and operation of interlocks				
29	Inspect tanks, lines, valves, drains, filters, and other components of air systems for leakage and proper operation				
30	Inspect reservoirs, pumps, motors, valves, lines cylinders, and other components of hydraulic systems for leakage and proper operation				
31	Check engines and engine-generator sets for proper performance, safety and system leakage				
32	Inspect for bent, cracked, corroded, or dented boom members				
33	Check condition of counterweights, ballast, and securing fasteners				
34	Check all compartments (voids) for water tightness				
35	Check accuracy of list and trim indicators against design data or previous test data				
Remarks:					
Legend: B—before; D—during; A—after					
Inspector Signature/Date		Test Director Signature/Date			

Figure 9-7. Crane condition inspection record-Continued.

offered at NCTC, Port Hueneme, California, and NCTC, Gulfport, Mississippi.

The crane certifying officer is designated by the commanding officer in writing. The crane certifying officer, according to the COMCBPAC/COMCB-LANTINST 11200.1 (series), designates the crane inspector in writing.

The inspector should use the NAVFAC P-307, *Management of Weight-Handling Equipment Manual*, as a guide to perform inspections on cranes.

For the correct procedures and precautions for the towing of mobile cranes, see CESO maintenance bulletin No. 82.

FINAL INSPECTIONS

The shop inspector performs final inspections on all CESE leaving the maintenance shop. The inspector makes sure that all repairs have been satisfactorily completed, readying the unit for return to service. After operational testing, the unit is turned over to dispatch. The inspector then returns the ERO or SRO package to cost control for closing out.

Occasionally a piece of equipment is returned to the shop for re-work. Keep in mind the quality of work leaving the maintenance shop is a direct reflection of how well you, as the inspector, are doing your job. If you do not feel the quality of work coming out of individual shops (automotive, 5000, heavy, etc.) is satisfactory, return the ERO or SRO to the shop supervisor. Inform the maintenance supervisor of the problem. He will discuss the situation with the shop supervisors and correct the problem.

Re-work is double work!!! Get the job done right the first time and you will not have to do it the second time. Quality assurance through thorough final inspection is the only way to achieve the goal of ZERO re-work. Ask the following questions in looking for common problems:

1. Was the maintenance or repair completed in a realistic time frame? Is it noted on the ERO?
2. Was all of the work completed?
3. Were all of the DTO parts installed?
4. Are parts being left off the completed unit (nuts, bolts, covers, etc., missing)?
5. Was the vehicle cleaned after the work was performed (important if it was the CO's sedan)?
6. Were any lubrication fittings missed? (Do your homework first; get the technical manual.)
7. WAS QUALITY PREVENTIVE MAINTENANCE AND REPAIRS PERFORMED? You are the inspector. Only you can answer this question.

One last item. As an inspector, your direct supervisor is the maintenance supervisor. Do not cut him short by not keeping him informed of what is happening in your world of vehicle inspection.

REFERENCES

- Construction Equipment Department Management and Operations Department Manual*, NAVFAC P-434, Naval Facilities Engineering Command, Washington, D.C., 1982.
- Construction Mechanic 1*, Naval Education and Training Program Management Support Activity, Pensacola, Fla., 1989.
- Management of Transportation Equipment Manual*, NAVFAC, P-300, Naval Facilities Engineering Command, Washington, D.C., 1989.
- Naval Construction Force Equipment Management Manual*, NAVFAC P-315, Naval Facilities Engineering Command, Washington, D.C., 1985.

